

REMARKS/ARGUMENTS

Favorable reconsideration of this application is respectfully requested.

Claims 12 and 13 are amended by the present response to address the minor objections thereto.

Claims 1-9 and 11-22 are pending in this application. Claims 1-5, 9, 11-13, 15, and 19-21 were rejected under 35 U.S.C. § 102(e) as anticipated by U.S. patent 6,256,133 to Suzuki et al. (herein "Suzuki"). Claims 6-8 were rejected under 35 U.S.C. § 103(a) as unpatentable over Suzuki in view of U.S. patent 6,445,483 to Takada et al. (herein "Takada"). Claims 14, 16-18, 20 and 22 were rejected under 35 U.S.C. § 103(a) as unpatentable over Suzuki in view of U.S. patent 5,305,022 to Ota et al. (herein "Ota").

Initially, applicant and applicants' representative wish to thank Examiner Pham for the interview granted applicants' representative on December 28, 2005. During the interview the outstanding rejections were discussed in detail. Further, during the interview claim amendments to clarify claim 1 were discussed. The present response sets forth those discussed claim amendments. Examiner Pham indicated the amended claims appear to address the current rejections, but would be further considered in view of a filed response.

Further, as discussed during the interview each of claims 15, 16, 19, and 20 is amended by the present response to now be rewritten as its own independent claim that clearly sets forth system or apparatus elements. Those claims amendments are not believed to narrow the scope of those claims in any manner.

Addressing the above-noted rejections, those rejections are traversed by the present response.

Initially, applicants note independent claim 1 is amended by the present response to clarify that the at least one lens surface that has a non-arc shape in the sub-scanning direction also "has a non-coaxial surface". That is, according to features clarified in the claims, at least

one lens surface of the two lens has both a non-arc shape and a non-coaxial surface. That feature is believed to distinguish over the applied art.

That claim feature is believed to be fully supported by the original specification for example by the expression (8) on page 44 in the originally filed specification, as now discussed.

In the originally filed specification, expressions (6), (7) and (8) are included on pages 42-44. As described in the specification, the expression (7) expresses “[a] curvature in a sub-scanning section” (page 42, line 23), and indicates that this section changes in a main scanning direction. Accordingly, a shape expressed by this expression is such that only an arc shape is obtained when the shape is cut at any point in the main scanning direction. This is because the expression (7) merely includes information of a curvature of an arc shape, and is not a function of Z.

On the other hand, in the expression (8), a function of Z expressed by coefficients F, G, H and so forth, is added. As a result, as described in the specification, this expression represents a “sub-non-arc shape” (page 43, line 12).

Next, the expression (6) is a function of Y by itself, and defines a shape in the main scanning direction. However, when the shape defined by this function is rotated about the origin (0, 0), a coaxial shape is obtained. A maximum feature of the coaxial shape is that it keeps symmetry about the origin. Accordingly, the thus-obtained function is necessarily an even function mathematically either for Y or for Z. That is, this function includes merely even-th (order) terms of Y and even-th (order) terms of Z. If odd-th (order) terms are included, this means non-symmetry.

On the other hand, the expression (8) has, for Z, coefficients expressed by F, coefficients expressed by H, coefficients expressed by J, and so forth, which correspond to a 1-st (or first order) coefficient group, a 3-rd (or third order) coefficient group, a 5-th (or fifth

order) coefficient group, and so forth. As a result, since the odd-th (order) terms are thus included, a shape non-symmetrical about the origin is meant by the expression (8).

Either for a Y direction or for a Z direction, what is required for a coaxial shape is that the expression is expressed by a function symmetrical about the origin. Accordingly, since the odd-th (order) terms are thus included in the expression (8), the corresponding shape is necessarily not coaxial.

Thus, the expression (8) represents a surface having a “non-arc shape in the sub-scanning direction” and also has a “non-coaxial shape”.

The outstanding rejection cites Suzuki to disclose a second lens 21 having one surface that is a non-arc shape, citing Suzuki at column 15, lines 17-18.¹

In that respect, applicants note that disclosure in Suzuki states, “[t]he first surface and the second surface are *coaxial* ‘non-spherical surfaces,’ ...” (emphasis added). Thus, in Suzuki the only surface having a non-arc shape is a coaxial non-spherical surface, which differs from the claims as written. The claims now require the same surface having the non-arc shape in the sub-scanning direction to also be a non-coaxial surface.

Further, according to the claimed invention, the non-arc shape in the sub-scan direction can be determined without correction to a shape in the main scan direction. In contrast thereto, according to Suzuki, a rotational symmetrical shape (i.e., a coaxial shape) with correlation between the main and sub-scan direction is disclosed.

The claimed features set forth that a non-arc shape is applied not only in the main-scanning direction but also in the sub-scanning direction, and that same surface has a non-coaxial surface. Such a combination of features is believed to distinguish over Suzuki.

In such ways, the claims as currently written are believed to clearly distinguish over Suzuki.

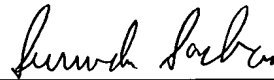
¹ The Office Action of September 20, 2005, the paragraph bridging pages 3 and 4.

Moreover, no teachings in the secondary cited references to Takada or Ota were relied upon for the above-noted features, nor are the teachings in Takada or Ota believed to cure the deficiencies in Suzuki.

As no other issues are pending in this application, it is respectfully submitted that the present application is now in condition for allowance, and it is hereby respectfully requested that this case be passed to issue.

Respectfully submitted,

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